IMPACT: International Journal of Research in Applied, Natural and Social Sciences (IMPACT: IJRANSS)
ISSN(E): 2321-8851; ISSN(P): 2347-4580
Vol. 2, Issue 11, Nov 2014, 167-182
© Impact Journals

SOCIOLOGICAL ASPECT OF DISASTER MANAGEMENT OF EARTHQUAKE 2005 AT AZAD JAMMU KASHMIR (PAKISTAN)

ADEEL-UR-REHMAN[1], FARHAT ZAFAR ALAM[2] & MUHAMMAD KHURSHID AKHTAR KHAN[3]

[1]Visiting Lecturer, M. Phil Scholar, Bahauddin Zakariya University, Multan, Pakistan

[2]Assistant Professor, Women University Multan, Pakistan

[3]M. Phil Scholar, Bahauddin Zakariya University Multan, Pakistan

ABSTRACT

On 8 October 2005 the strongest and most destructive earthquake hit Muzaffarabad, Pakistan. The United State Geological Survey (USGS) measured its magnitude as 7. 6 on the Richter scale, with its epicenter about 19 km (11.8 miles) northeast of Muzaffarabad, Pakistan; and 100 km (65 miles, north-northeast of Islamabad (Pakistan). The hypocenter was located at a depth of 26 km (16.2 miles) below the surface (USGS). This major earthquake and its attendant geologic processes surface faulting, liquefaction, landslides and debris flows exacted a toll of 73, 318 dead, 69, 292 seriously injured, 58, 896 injured, 400, 000 households affected and this account' for about 3.5 billion people. The children have taken major front of the casualties. About 80 percent of Balakot and 80 percent of Bagh's populations died. A full generation has been lost and more than $5. 2 billion in actual damages 10 public infrastructure and facilities and private properties has occurred. To find out the causes and damage of earthquake researcher had detailed investigation to the families, which affected by Earthquake at Muzafarabad. Researcher adopted Quantitative research design. Selected universe was Muzafarabad. Sample consists of 200 affected families. Random technique of sampling is adopted and household survey was held. Structured questionnaire is used a. the tool of research: Firstly, questions were related to personal crisis, secondly to community crisis and thirdly to country crisis.

KEYWORDS: Sociological Aspect, Earthquake, rehabilitation, Reconstruction, Disaster Management, Policy Implication

INTRODUCTION

Earthquakes are the most ferocious among all the natural hazards. The massive destruction of earthquake disaster on October 2005 measuring 7.6 on the Richter scale in Northern Pakistan has resulted in thousands of people losing their lives, sources of livelihoods and employment. Earthquake disasters may have dramatic consequences for well-beings. The crisis situation had also horrific impacts on the masses articu1arly women and children in earthquake areas of Pakistan. Large numbers also have been orphaned or separated from parents. Many are seriously ill, lacking nutrition and facing seriousness of the winter season. A large number of studies indicate that disaster effects depend upon basic socio-economic and demographic characteristics and institutional rehabilitation sometimes in complex and unanticipated ways (Norris 2002).

An earthquake is a sudden movement of the earth caused by the abrupt release of strain that has accumulated over a long time. For hundreds of millions of years the forces of plate tectonics have shaped the earth as the huge plates that form the earth's surface slowly move over under and past each other. Sometimes the movement is gradual. At other times

the plates are locked together unable to release the accumulating energy. When the accumulated energy grows strong enough the 2 plates break free. If the earthquake occurs in a populated area, it may cause many deaths and injuries and extensive property damage.

Today Pakistan is challenging the assumption that earthquakes must present an uncontrollable and unpredictable hazard to life and property. Scientists have begun to estimate the locations and likelihood's of future damaging earthquakes. Sites of greatest hazard are being identified and definite progress is being made in designing structures that will withstand the effects of earthquakes. Pakistan continues to suffer from a glut of natural and human made hazards that threaten to affect the lives and livelihood of its citizens, natural disasters, including floods, earthquakes, landslides, cyclones, and drought to human induced disasters such as fires, civil unrest and tourism, refugees and internally displaced people, health epidemics, and transport accidents, industrial accidents and war (World Disasters Report 2003).

Great earthquakes are poorly known in this region prior to 19th century and even 20th century moderate and major events are not well studied seismically (Molnar 1975). The Pamir-Himalaya Arc outlined by the convex-northward curvature of the Pamir, Hindokush, and the Pakistan Himalaya. Within the concave side of the area lies the Hazara-Kashmir Syntaxes (Wadia 1931). Adapted this terminology and named correspondingly the Pamir-Himalaya Arc and Hazara-Kashmir syntaxis. Northeast of the Hazara-Kashmir Syntaxes the geological structures bent around the Nanga Parbat-Hararnosh mass if.

Geographically the recent earthquake of 8th October 2005 (Mw 7.6) occurred in the Kashmir region, but whether its location is in the Kashmir seismic gap region is still under discussion. The United States Geological Survey (USGS) and European Mediterranean seismological center (EMSC) have reported the epicenter of this earthquake in the syntaxes, while the Indian Meteorological Department (IMD) has reported it further west. Aftershocks of the earthquake as reported by Pakistan Meteorological Department (PMD) and USGS lie further NW of the main shock epicenter and beyond the syntaxial bends in the Indus Kohistan Seismic Zone.

This earthquake occurred on pre-existing active faults. The newly deformed area occupies a 90 to 100 km long northeast trending strip extending from Balakot, Pakistan, southeast through Azad Kashmir. The heavily damaged area north of Muzaffarabad, Kashmir shows the maximum deformation. There is known active faults stretching to the northwest and out east near the epicenter. The known active faults is divided in two fault groups, the Muzaffarabad fault, northwest of Muzaffarabad and the Tanda fault, southeast of Muzaffarabad. Seismically, the most active geological structure of this region is considered to be capable of generating events.

The present study has focused on particular features of earthquake 2005 at Azad Kashmir.

- The effects of earthquake as a natural disaster and sociological significance of affected area.
- Sociological analysis of sufferings caused by earthquake.
- Methods of reconstruction and rehabilitation for people in affected area
- Preparedness and disaster management through socio economic and demographic variables at micro and macro levels.
- Study of disaster management measures.

To find out the above mentioned objectives, researcher had a deep and detailed investigation, to the families, which affected by Earthquake at Muzafarabad. Researcher adopted quantitative, as well as qualitative research designs. Selected universe was Muzafarabad. Sample consists of 200 affected families. Random technique of sampling was adopted and household survey was held. Structured questionnaire was used as the tool of research. Questionnaire was made carefully; all questions were adjusted with particular sequence.

DISASTER MANAGEMENT: CONCEPTUAL FRAMEWORK

Early researches on the relationship between human response and the effect of disaster revolve around socio-economic dimensions of vulnerability. Theoretical models developed during 1980s and 1990s known as vulnerability theories gained significance as providing framework for understanding vulnerability to disaster and mitigating it.

Capacities and Vulnerabilities Analysis (CVA) and Pressure and Release Model (Blaikie 1994) provided an early framework for understanding and reducing the vulnerability to disaster to address livelihood aspects.

Cernea (1997) addressed the issue of livelihood through Impoverishment Risk and Reconstruction (IRR) Model in the context infrastructure development policy induced population displacement causing livelihood destruction, based on his extensive empirical research into the changes brought about by forced displacement. McDowell (2002) constructed a general risk pattern based on identification of eight common processes identified as risk leading to impoverishment. These impoverishment risks are Landlessness, Joblessness, Homelessness and Marginalization, Food insecurity, increased morbidity, Loss of access to common property resources and community disarticulation.

In the context of earthquake, the eight risk identified in Cernea (1997) framework are condensed to five hypothetical transmission of each of the five risk to impoverishment is outlined and preliminary assessment by international agencies of these risks due to documented as follows

- Landlessness and food insecurity inter-connectively impact livelihood as land being primary source production system and commercial activities. In the earthquake affected areas of AJK landslides and rockslides severely damaged agriculture structure including 5 percent of terrace/bunds. 50 percent of devices percent irrigation, percent cannels (UN 2005).
- According to the World Bank Assessment Report 2005, large-scale destruction has caused immense loss housing, leading to homelessness across earthquake-affected area. The loss represents 84 percent of the total housing stock in AJK and 36 present in NWFP, predominantly located in rural urban constitute percent total. Mountainous terrain was major factor accentuating the destruction of houses in most affected rural areas where houses were built on steep slopes.
- Joblessness viewed loss wage employment and earning another risk identified in the post-disaster situation faced by displaced people. Severely damaged agriculture structure and 100 percent loss of livestock in worst affected areas, according to the UN (2005) assessment, would result in prolonged and worst cases permanent unemployment increased in extreme poverty.
- Marginalization and social disarticulation, two interconnected ones, are ultimate outcome of various economic and social risks including landlessness, homelessness; joblessness and food insecurity crudity signify loss of economic power and standard of living faced by displaced population for a long time. In the earthquake affected

areas the chances of marginalization are particularly higher among vulnerable groups such as disable people due to physician's ability to pursue their rights or single female headed families and single woman reluctant even to go to tents outside their local areas, the danger of marginalization is greater for a large number of unattended children.

Review of Literature

This chapter focused international and national relevant reviews in detail. Reasons of disaster, method of preparedness, techniques of reconstruction, rehabilitation and sociological impacts are discussed.

International Studies

Briton (1986) argues that a disaster is severe, relatively sudden and unexpected disruption normal structural arrangement with in a social system over which the system has no firm control. A disaster also be viewed that a significant departure from normal experience for a particular time and place. Disaster may also be viewed as a mental construct imposed upon experience, understand disaster, simply knowing the number of deaths, the value of property destroyed or decrease in per capita income. The symbolic component requires knowledge of the sense of vulnerability, the adequacy of available explanation and the society's imagery of death and destruction.

Myer (1991) stated that the demographic characteristics of the communities affected by disaster must be considered when designing a mental health program. Urban, suburban, rural areas have different needs, resources, traditions and values about giving and receiving help. It is essential that program consider ethnic and cultural groups in the community and provide services that are culturally relevant and in the language of the people. It is important that disaster mental health workers recognize the different phases and varying psychological and emotional reactions of each phase.

Ostrow (1996) concluded that disaster disrupts so many aspects of daily life; many problems for disaster survivors are immediate and practical nature. People may need help locating missing loved ones, finding temporary houses, clothing and food, obtaining transportation, applying for financial unemployment insurance, building income tax assistance, getting medical care, replacement of eye glasses or medication, obtaining help with demolition, digging out and clean up the process of obtaining temporary housing, replace belongings, getting pennies to rebuild applying for government assistance. Seeking instance acquiring help from private or voluntary agencies is often taught with Niles, red tape hassles and disappointment. People must often establish ties to bureaucracies to get aid, they can nowhere else.

According to Stress and Rose (1998) brings about physical symptoms such increase heartbeat and 1espiration, an elevation in blood sugar level increase respiration and low digestion. The emotional symptoms include ear, anger and frustration. In psychiatry, aggravation of a normal behavior due to disaster could lead to psychiatric illness, which is termed Post-traumatic Stress Disorder. These powerful emotions produced by powerful disruption to our lives. Unless the emotions are handled properly they will lead o long-standing disability and personality difficulties.

According to Silva (2004) by understanding natural disaster take into account both the important of a natural phenomena and the level of vulnerability in a given habit, it will be able to recognize that the risk of a disaster depends not only on natural elements, but also on social, economic, political and cultural factors related human being and their development. This particular view disaster aimed at reducing the risk and probabilities of catastrophe caused by destructive event that might take place in a particular region. Disaster shapes the behavior of people according to their accepted model

of reality; therefore, it is essential the intervention efforts are sensitive to the cultural, religious and linguistic realities population served. Whenever professional that reflect the diverse characteristics shared by a community should deliver possible mental health support service. Culture and trauma experiences may also contribute to the interpretation of what is considered traumatic, as well as intervention efforts.

National Studies

Hussein (2005) reveals the children's positive and negative experiences for Trauma conducted children's emotional positive and negative experiences for earthquake in Pakistan. His study focused emotional memories, especially for children who experienced repeated exposure to the aftershock of the earthquake, witnessed deaths of loved ones, parental separation, minor and major injuries and damage of homes which effected their lives. The major objective was earthquake trauma experienced by children and to assess the impact of these experiences on their behaviors. Research evidence has suggested negative narratives were more disorganized. Identification of these reactions and their manifestation would be helpful in formulating counseling strategies and therapeutic interventions plans for traumatized children.

Mansoor (2006) said in his research paper "Earthquake Diplomacy" is born out of a disaster situation and serves to the icy relationship between two rival countries, was first utilized by Turkey and Greece, two traditional rival countries, after they had reacted other's hour of need and calamity by providing humanitarian aid and was successful to burying the hatchet on many issues. The major factor accountable for improving relations between the two sides is the fact that the offer of humanitarian aid and caring for other's miseries 'reminds both sides of the fact that our pains sorrows are one. The earthquake 2005 brought many countries to the immediate help of Pakistan, India being the leading of them. It offered humanitarian aid to Pakistan and opened LOC for Kashmiries to reach their relatives in their hour of need.

Mohammad (2006) presents anthropological and sociological, analysis of disaster in Balakot. The study elaborated the importance of the cultural expression of disaster management and association with emotional stability. The study illustrates that intention toward cultural expression Balakot related emotional instability for the suffering people and also constructed hurdles in relief work as it decreased the people's cooperation coordination with relief workers and agencies.

Jahangeer and Hussainy (2006) gave some important recommendations to preparing students as lifelong learners and problem solvers by integrating natural disaster preparedness and citizenship education in Pakistani curriculum. Teacher's aspiration for all children and for every young person is that recommendations for the curriculum and teachers, training for active citizenship, environmental disaster preparedness and contextual learning.

Propositions and Discussion

The present study was conducted to investigate the effects narratives of emotionally positive and negative experiences for earthquake disaster in Pakistan and how emotional memories, especially for children who experienced aftershocks of the earthquake, witnessed death of loved ones, parental separation, minor or major injuries and damage of houses affected their lives. Sociological analysis of the disaster management is one of the worst earthquake stricken areas of Pakistan 8 October 2005. The study elaborated the importance of the consideration of cultural expression with emotional stability in disaster management. As an environmental disaster caused loss of human capital stock and flow which has

increased destabilization of the environment within the victim region and outside. There is need to develop short and long run strategies to minimize the implication of the earthquake on the human capital stock and flow. Signs of psychological development of trauma in children include fear of abandonment, horror, anger, frustration, depression, fearful memories of trauma and nightmares. Children feel vulnerable, view the world unsafe and adult are unable to protect them. Whenever possible, disaster mental health support should be delivering by the professional that reflect the diverse characteristics shared by the community.

Research Methodology and Data Analysis

Researcher adopted Quantitative research design. Selected universe was Muzafarabad. Sample consists of 200 affected families. Random technique of sampling was adopted and household survey was held. Structured questionnaire was used as the tool of research. Questionnaire was made carefully; all questions were adjusted with particular sequence. Firstly, questions were related to personal crisis, secondly to community crisis and thirdly to country crisis. Similarly, there were questions about reconstruction and rehabilitation. For statistical analysis, tables were drawn; frequencies and percentages were calculated through the SPSS. Through statistical analysis, researcher got very important and useful results.

Methodological Issues

After collecting data, coding is done. Answers were coded in SPSS. Two methods are used for empirical data analysis.

- Descriptive data analysis
- Logic Model analysis

Descriptive Data Analysis

In order to exam in the sociological impact on individuals of earthquake area, the results were analyzed with the help of tabulation based on percentage,

P=F/N (100)

Where

P percentage

F= Absolute frequency

N=Total number of items

Description of Logic Model

In this model, the response binary, taking only two values, 1 for response and 0 for absence. For example the table of social effect of social solidarity (SESS), I stand for higher rate of crime and social disorder and 0 stands for low crime rate and social order.

Pro (Y = 1) = F (’X)

Prob (Y = O) = 1 – F (’X)

Using of logistic distribution.

Prob (Y= 1) = e ’X/ 1 + e’X

= (’X)

Probability model is regression

E = [Y/X] = 0 [1 – F (’X)] + [F (’X)

= F ’X)

Sociological Impacts on Individuals of Earthquake Area: An Econometric Analysis

For this research, the logic model is used for analysis. The precise nature of the dependents variable is explained and binary repressors included in the model are discussed.

List of variables

Table 1

S NO	Abbreviations	Variable
•	AFEH	Affordance of ERRAa houses
•	ATTI	Attitude change
•	AUPS	Authorities to provide
•	CDEP	Causes of depression
•	CHED	Children education improvement
•	CONC	Measures to control the crime rate
•	CONS	Construction of safe houses
•	CYCH	Crime against young girls, children
•	DEPN	Rate of dependence
•	EDCO	Education code
•	ENVD	Minimize environmental degradation
•	EOPT	Effects of poor medical treatment
•	ERNH	Earning hands
•	FAID	Form of aid
•	FINS	Financial satisfaction
•	GAID	Aid provided by government
•	HCEA	ERRA efficiency
•	HCOC	Hidden causes of crime
•	IFIN	House construction
•	INAF	House location
•	LPRO	House location
•	MAES	Head of the family
•	MEDA	Services for good health
•	NPIM	Impact of earthquake on human syche
•	NPIM	Improve the financial condition
•	HCON	Effected individuals in one family
•	HLOC	Loss of property
•	HLOC	More affected sector of economy
•	HOFM	Level of medical assistance
•	HSER	Nature of hazard
•	IEHP	Negative psychological impact
•	PART	Rate of participation

•	PPIM	Positive psychological impact
•	PSEC	Provision of security
•	RCAD	Rate of crime after disaster
•	RMAD	Reason for more aid
•	RTEC	Types of established crime
•	RTEC	Types of established crime
•	SAID	Source of aid
•	SCCH	School going children
•	SESS	Social effect on solidarity
•	SMFE	Safety measures from earthquake
•	STAD	Satisfaction of individuals by aid
•	STFM	Structure of family
•	TAGL	Type of agricultural loss
•	TCLT	Type of causality
•	UNAF	Un afford ness Of ERRA houses
•	WAID	Want more aid
•	WEEQ	Ways to escape from earthquake
•		

Model – 1

Binary Logistic Regression

Earthquake Management Model of Social Variable

(Social Effect on Social Solidarity, SESS)

Logistic Regression Table

Table 2

Predictor	Coefficients	Z test	Odd Ratio
Constant	1.0719	2.90	
STMF	0.6602***	-1.63	0.52
TOEC	2.0745*	-4.05	0.13
CYCH	0.1094	0.30	1.12
PSEC	-0.3085	-0.61	0.73
CHED	0.9238*	-2.50	0.40
MEDA	-0.4612	-1.19	0.63
IFUSJ	0.3512	0.96	1.42
Log-Likelihoods = -119.840 Test that all slops are zero: 0 3 7.399 DF 7, P Value = 0.000			

Notes: * Indicates that the coefficients are significant at the 1 percent level.

** Indicate that the coefficients are significant at 5 percent level.

*** Indicate that the coefficients are significant at 10 percent level.

Explanation of Empirical Results of the Model

Logistic Regression table explains that SESS (social effect on social solidarity) has strong imp act on TOEC (types of established crime) and CHED (child education improved are significant at 1 percent level. Where STMF (Structure of Family) is significant at 10 percent level. CYCH (crime against children and young girls), PSEC (provision of security), MEDA (level of medical assistance) and IFIN (ways to improve financial condition) are not significant variables. It indicates that high social solidarity reduces the rate of crime. Social solidarity improves children

education.

HYPOTHESIS

Lower the social solidarity would be increase the crime rate.

According the situation of crisis, there was big-amount of relief in the form of money and it was situation of anonymity, different types of crime established, so rate of crime increased. It concludes that if social solidarity decreases, rate of crime increases. Both variables are directed proportional and significant at the 1 percent level.

Model – 2

Binary Logistic Regression

Earthquake Management Model of Psychological Variable

(Causes of Depression, CDEP)

Logistic Regression Table

Table 3

Predictor	Coefficient	Z Test	Odds Ratio
Constant	-1.1000	-1.5	
INPC	0.0005495*	0.0001639	1.00
STFM	0.6266***	- 1.57	0.53
IF1N	0.8112***	1.69	2.25
TCLT	0.2723	0.64	1.31
HDES	1.5917*	2.72	4.91
SESS	1.2144*	- 3.10	0.30
NPIM	2.2137*	- 4.54	0.11
Log-Likelihood= -105.237 Test that all slops are zero: G 57.025 DF 7, P Value = 0.000			

Notes: * Indicates that the coefficients are significant at the I percent level

* * Indicate that the coefficients are significant at 5 percent level.

**** Indicate that the coefficients are significant at 10 percent level

Explanation of Empirical Results of the Model

According to the result, the significant on CDEP (causes of depression), INCP (income per capita) HDES (house destruction), SESS (social effect on social solidarity), NPIM (negative psychological impact) are significant at 1 percent. IFIN (ways to improve financial condition) are significant at 10 percent level. It suggests that main cause of depression related to low per capita income, house destruction, low social solidarity and negative psychological impact (loss of lives, homelessness, dependency) beside physical destruction of houses, other livelihood and communication infra structure seriously affected psychological emotions of the people. Loss of lives, destruction of houses, loss of jobs and business created depressive atmosphere.

Hypothesis

Social distress due to earthquake leads to social depression.

Particular hypothesis is strongly accepted at the 1 percent level of significance

Model – 3

Binary Logistic Regression

Earthquake Management Model of Economic Variable Satisfaction of individuals by getting aid, STAD)

Logistic Regression Table

Table 4

Predictor	Coefficient	Z Test	Odds Ratio
Constant	- 8.746	-.327	
EDCD	- 0.7096*	-3.12	0.49
NPC	0.0027462*	3.56	1.00
FINS	4.822*	2.59	124.24
HOCN	- 2.265***	-1.86	0.10
TAGL	1.134	0.79	3.11
TINL	- 0.955	-0.73	0.38
MAG	0.8409	0.858	2.32
	1.822***	1.49	6.18
Log-Likelihood-22.091 Test that all slops are zero: G = 46.606, DF =8, P Value = 0.000			

Notes: * Indicates that the coefficients are significant at the 1 percent Level.

* * Indicate that the coefficients are significant at 5 percent level.

* * * Indicate that the coefficients are significant at 10 percent level

Explanation of Empirical Results of the Model

According to binary logistic regression, it is concluded that EDCD (educational code), INPC (income per-capita) and FINS (financial satisfaction) are significant at 1 percent level.

HCON (house construction) is significant at 5 percent level. MAGL (minimize the agricultural loss) is only 10 percent significant. Remaining variables are not significant. According to analysis, it is suggested that provision of aid has impact on educational code, per-capita income and finance satisfaction. Minimize the agricultural loss is less signified variable, at 10 percent level. Remaining variables, type of agriculture loss (land, soil and crop expired), type of industrial loss (machines and labors expired) and child education has no relation with constant variable.

Hypothesis

Satisfied Aid Promotes Children Education and Per-Capita Income

Horrible earthquake destroyed the city, immediately Government of Pakistan, Military and many NGOs started helping activities in different ways. Relief and aid was provided as soon as possible. In this way organizations want to improve financial conditions of affected people. They gave money and loans which was -beneficial for individuals. This hypothesis was approved.

Summary Conclusions and Policy Implications

The Earthquake of 8th October 2005 is recorded as the worst disaster in the history of the country. Which killed 73,338, injured 1, 28, 304 and displaced 3.5 million people. 7.6 on Richter scale Earthquake devastated 5 districts of Azad Kashmir, where in Muzafarabad and Baagh were totally destroyed while Rawalkot, Sudhnuti and Neelam partially - damaged. The devastation was so huge that it ruined almost all aspects of social and economic fabrics and lives of the people.

The present study has focused on particular features of Earthquake 2005 at Azad Kashmir.

- The effects -of earthquake as a natural disaster and sociological significance of affected area.
- Sociological analysis of sufferings caused by earthquake.
- Methods of reconstruction and rehabilitation for people in affected area -
- Preparedness and disaster management through socio. Economic and demographic variables at micro and macro levels.
- Study of disaster management measures.

To find out the above-mentioned objectives, researcher develop a deep and detailed investigation to the families, which affected by Earthquake at Muzafarabad. Researcher adopted quantitative, as well as qualitative research designs. Selected universe was Muzafarabad. Sample consists of 200 affected families. Random technique of sampling is adopted and household survey was held. Structured questionnaire is used as he tool of research. Questionnaire was made carefully, all questions were adjusted with particular sequence. Similarly, there were questions about reconstruction and rehabilitation. or statistical analysis, tables were drawn, frequencies and percentages were calculated, and presented by the use of histograms and pie charts. Through statistical analysis, researcher got very important and useful results, which would discuss in next point. Finally, this research came to end successfully. Researcher hopes positively that this research would be a guideline for coming researchers. Conclusions and suggestions are given at the end of the research.

CONCLUSIONS

- Loss of human capital flow is basically a disruption, temporary or permanent, in the process of flow of human capital in the form of education, skills, experiences and practices.
- Loss of physical capital includes the loss to government and private infrastructure such as school building, electricity, laboratories, furniture and transport. For example, government employees, such as civil servants, teachers, police officers and others, receive their salaries while they are unable to work because offices, schools and other workplaces were destroyed.
- Health facilities loss leads to large number of weak and sick children and mothers and changes priorities concerning the education of boys and girls. People of particular area have poor health status due to the paramedical staff and medical facilities.
- Loss of environmental capital includes a large number of houses will require timber and stones. Similarly, the loss of sanitary facilities will lead to high rate of morbidity, which in turn reduces the growth rate of human capital. Water supply loss also leads to water born diseases and results in the reduction of economic growth.

- Sources of earning loss is the loss of arid and non- arid agricultural fields, orchards, live stocks, which leads to reduce income and increased morbidity due to less and impure foods and nutrition.
- Human capital loss is the loss of students, teachers, trainers, support staff and developed human capital.
- Subject specific loss is the loss of subject specialist and science laboratories that leads to the loss of opportunities to study science subjects including medicine, engineering and pure sciences.
- There is loss of native willing workers.
- Entrepreneurs are the most precious human capital of developing and sustaining of productive chain ranging from local business to the global economy.
- It was observed that after earthquake, rate of crime increased, Robbery, dacoit, abduction and fraud were common. Detailed investigation revealed that the major reason of crime was anonymity due to the migration of people and arrival of new and unknown people who belonged different organizations and NGOs. Some other important causes were also located, that were Unavailability of law enforcement agencies - civil administration. Division of relief in the form of money. Due to migration of people and anonymity, there was social disorder and restlessness. Social cohesion was weak and crime rate was high.
- Children are affected emotionally by positive and negative experiences, and emotional memories, especially for children who experienced exposure to the aftershocks of the earthquake, witnessed death of loved ones, injuries and house damage. These children are frustrated, depressed and traumatized.
- Some attitudes of elders are also changed after the crisis of disaster. Some particular negative attributes established, greediness, criminality, dependency and selfishness.
- People of affected area are satisfied by aid and positive performance of different organizations but still waiting for more aid. According to detailed survey, they have many incomplete requirements.
- Although the non-governmental sector took the lead performing relief functions, which - government should have performed, government's efforts are also well recognized at all levels, several government agencies were involved disaster risk management, the government established Federal Relief Commission (FRC) within days of the disaster to coordinate the massive rescues and. relief operation. The Earthquake Rehabilitation and Reconstruction Authority. (ERRA) created to serve as the main interface with international lending institutions, other international organization, as well as with national authorities focusing on the rehabilitation of the stricken areas.
- Volunteers play a very important role during disaster. To organize and coordinate the volunteers, the National Volunteer Movement (NVM) was established.

Policy Implications

From above discussion, there are some suitable and useful suggestions. That is stated below, to deal with the overall situation. Reconstruction of the ravaged areas is a long process. Therefore, whatever strategy develops, it should be long lasting. Government is engaged in the collection of funds through various means to meet the costs of the construction. It is often said that it is the buildings that kill people and not the earthquake. This means that the earthquake causes

destruction to the buildings, which in turn causes of deaths or injury to men, women and children living in them. Therefore, the new constructed houses are built to higher earthquake resistant standards. The model cities in the places destroyed by the quake need to be earthquake proof. Our engineers and builders are required to get Training in quake resistant technology.

Earthquake-Proof Buildings should be Constructed in the Quake-Hit Areas

- Every town should have a school, hospital, mosque, shopping center recreation.
- Park, sport club, playground, etc. Each town should be provided with basic facilities, including c lean drinking water.
- In country, builders of high-rise buildings violate rules and construct building projects by greasing the palms of the officials. Therefore, the government should depute experts to physically visit the sites of high-rise apartments under construction to determine if they are indeed quake proof.
- The government should ensure the participation of local people in the construction and rebuilding of houses and other public buildings, etc. For this purpose, they should be given specific training in technical schools. The skilled labor may also be utilized future development projects of the government.
- Education must be provided to all the children of the affective areas.
- A person as an individual can sponsor a child's education, adopt him or her, and make monthly or annual contributions towards building or maintaining their schools to overcome final and social difficulties.
- Special training courses should be arranged for teachers, psychologists and social workers to take the children out of their situation. Special education centers must be opened for children with special needs.
- Children and youngsters should be educated about earthquake preparedness at all school levels by including materials in text books, films, conducting drills, exhibitions, drawing and writing competitions and posters.
- Free education must be provided to all the children of the affective areas.
- Pakistan Poverty Alleviation Fund (PPAF), which is the largest social fund of its kind set up by the World Bank, should contribute towards the relief and reconstruction of schools for the children:
- The protection of children, especially orphans, and women from exploitation is one of the greatest challenges. The children must be looked after to avoid the risk of child trafficking.
- Psychiatric counseling of survivors is necessary to return them to normal Life. Mobile counseling units may be established for this purpose. Trained psychologists are needed to do work voluntarily for the hospitalized children.
- The government should give easy loans to the people for the purpose of rebuilding houses. The cost of construction materials should be reduced.
- The government should establish small-scale industry in these areas so that the survivors, who have lost their jobs, may be able to get employment. This step will generate economic activity, which is considered sine qua non for the economy.

- Crisis management institutions like Civil Defense should contribute towards the, rehabilitation of schools and other offices of educational institutions and education department. The planning and construction of all public buildings, especially schools and hospitals, should be based on the highest earthquake resistant standards.
- Disaster management is the collective work of all organizations and people at the local level. However, the Earthquake Disaster Management cell should be established at the district level. They should be fully equipped with the latest technology and trained in seismology. They should also work as warning centers to provide warning proper to any unwanted event.
- Earthquakes are a natural calamity and they cannot be stopped. However, constructing buildings, which incorporate quake resistant features, can minimize the loss of life and property.

REFERENCES

1. Bilal, M. (2006). Cultural Expression, catastrophe and emotional stability. Gender aspects and issue in Pakistan. In -the Proceedings International Conference "Earthquake 10/8 Social, Human and Gender Issue" in Collaboration with Higher Education Commission.
2. Blaikie, P., Cannon, T., Davis, I., and Winser, B. (1994). At Risk, Natural Hazards. People Vulnerability and Disaster, London. UK: Routledge.
3. Britton, N. (1986). Organized BehavIor in Disaster: Psychological, Social and Legal perspectives. London. UK: Routledge.
4. Cernea, M. (1997). The Risk and Reconstruction Model for Resettling Displaced Population vulnerability and Disaster. World Development. Vol.25. No. 10, pp.1569-1587.
5. Hussain (2004). Gender aspects and issue in Pakistan. In the Proceedings International Conference "Earthquake 10/8 Social, Human and Gender Issue" in Collaboration with Higher Education Commission. Islamabad. Pakistan. Kashmir Islamabad. Pakistan
6. Jehanger, S., and Hussain, A., (2006). Natural disaster. Properness citizenship Pakistan. Proceedings International Conference in Collaboration with Higher Education Commission. Pakistan
7. Molnar (1975). The Pamir-Hamalya Arc in Pakistan. Geology of Pamir-Harnalya. USGS General Interest Publication.
8. McDowell, C. (2002). Involuntary Resettlement, Impoverishment Risk, and Sustainable
9. Livelihood. The Australian Journal of Disaster and Trauma Studies. Vol. 2002, No.2.
10. Norris (2002). Washington state Earthquake Hazards. Washington division of Geology and Earth Resources Information.
11. Ostrow, L. (1996). Critical Stress Management. Journal of Emergency Service. University of Chicago Press, Chicago.
12. Rose, S. (1998). Brief Early Psychological Intervention following Trauma. A systematic review of literature.

Journal of Traumatic Stress.

13. Siliva (2004). Phobia and preparedness. Behavior Therapy, Science of Human Behavior. New York. Collier Macmillan Publishers.
14. Wadia (1931). Pamir- Himalaya Arc and Hazara Synaxis. USGS General Interest Publication.
15. World Bank Asian Development Bank (2005). Pakistan 2005. Earthquake, Preliminary damage and Need Assessment, Islamabad.